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# Chapter 9

# PARACHUTE

# SIMULATOR

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RAM-AIR PARACHUTE  
TRAINING MANUAL

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BLM SMOKEJUMPERS

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## CHAPTER 9 - PARACHUTE SIMULATOR

This chapter introduces the student to the computerized parachute simulator. Students must demonstrate an understanding of all the concepts involved with smokejumper Ram-Air parachute jumping and operations prior to live jump training.

The simulator is used to expose the students to the concepts involved with flying the ram-air parachute. These include the jump count, opening checks, patterns, ground tracking, sight picture, and accuracy.

The simulator provides opportunity for one-on-one interaction between student and instructor, and works best with a small group of students taking turns at the controls.

The simulator can also be a useful debriefing tool once actual jumps begin. The computer can be used to simulate conditions on a training jump for the sake of demonstration.

### **Instructor Notes**

The lesson plan sequence can be modified if an instructor desires. One school of thought is that working "backwards" makes it easier for a student to master the concepts. (Final is taught first, then the pattern, then pre-pattern flight.) In addition, the ram-air exit and jump count can be awkward with the simulator. The instructor may choose to eliminate this portion of simulator training to put the focus on learning to fly the canopy.

### **CHAPTER OBJECTIVES**

At the completion of this chapter the student must:

1. Demonstrate verbally and physically the four point check and guarding of the reserve.
2. Demonstrate proper aircraft exit procedures and body position.
3. Demonstrate verbally the Ram-Air jump count with proper timing.
4. Demonstrate verbally and physically the after-canopy opening checks.
5. Demonstrate ability to fly up wind of jump spot doing wind checks and stall checks.
6. Demonstrate ability to fly a formal pattern using a downwind, base, and final approach.
7. Demonstrate a final approach using a sight picture and gentle toggle movements.
8. Demonstrate a safe and acceptable landing.
9. Verbally list the 3 categories of the jump evaluation criteria.

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### **EQUIPMENT NEEDS**

1 ea. - Computerized parachute jump simulator.

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## Lesson I    PARACHUTE PERFORMANCE STANDARDS

The following is a guide to help define parachute handling performance. Emphasis will be placed on providing extra instruction to those individuals involved in marginal or sub-par performance. It will also serve to identify trends in unacceptable performances and help prevent injuries caused by a lack of technical skill.

### LESSON OBJECTIVE:

**At the completion of this Lesson, the students must verbally list the five categories of the jump evaluation criteria and identify the instructor responses associated with each evaluation.**

### EQUIPMENT NEEDS:

1 ea. – copy of the jump evaluation criteria for each student.

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During training jumps and computerized simulated jumps, the lead parachute instructor will evaluate exit, pattern, and landing using these five ratings:

- (5)    **Exceptional-** The exit, pattern and landing are all preformed in a flawless manner exceeding set performance standards under challenging wind and/or terrain conditions. Accuracy is excellent and jump objectives are met.
- (4)    **Superior-** Exit consists of a tight body position and accurate jump count. Pattern is performed maximizing jumper safety and providing the best chance for overall jump success. Final approach and landing are both safe and well executed. Accuracy is good and jump objectives are met.
- (3)    **Fully Successful-** The individual utilized good parachute handling techniques, i.e. performed necessary procedures and maneuver, and a good landing. Accuracy is acceptable and jump objectives are met.
- (2)    **Minimally Successful--**the individual erred in one or more areas (exit, pattern or landing). i.e. pulled drogue release early; had to fly to alternate spot due to poor parachute manipulation, but salvaged the jump with a good landing; failed to get vertical separation from JP; cut off JP on final; poor PLF; hard landing induced by improper controls. Jump objectives not met.
- (1)    **Unsatisfactory--** Standard procedures disobeyed which resulted in a serious problem or potential problem, i.e. collision or near collision with JP; failed emergency procedures during malfunction; severe downwind

landing; landing so far off the spot that it becomes a hazard; low radical turns; forced or intended stand-up landing, stalling or sink during landing.

#### Jump scoring criteria

Jump scoring will be assessed using an average of the scores received in the three categories identified on a standard jump critique form. The exit, pattern and landing are the three areas evaluated. Scores will be given and averaged for a jump. This overall number will be the final jump score given. However, if a score of 1 (unsatisfactory) is given in any category the entire jump score will be lowered to this level so that corrective action can be taken.

A category **3, 4 or 5** evaluation will indicate solid parachuting skills and require no additional action.

A category **2** jump would precipitate one-on-one “counseling” with the individual and parachute trainer; using video review or discussion of the error, the individual would receive information on how to improve in an honest, non-confrontational setting.

A category **1** jump would be reviewed by the individual and more than one parachute trainer and the incident would be documented. A case history would be established, and, if a trend toward unacceptable jumping develops, it could be grounds for removal from the program.

## **Lesson II    SIMULATOR EXITS**

### **LESSON OBJECTIVES:**

- **Demonstrate verbally and physically the four point check and guarding of the reserve.**
  - **Demonstrate proper aircraft exit procedures and body position.**
  - **Demonstrate verbally the Ram-Air jump count with proper timing.**
  - **Demonstrate verbally and physically the after-canopy opening checks.**
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### **Instructor Notes**

Incorporating exits with the simulator helps a student keep proper time frames and establishes the normal jump routine. The simulator shouldn't be used as the primary tool for teaching exit procedures due to the added distraction of the VR goggles. With student on simulator, an instructor can perform role of spotter starting with the command "Get in the door." The instructor should continue giving the appropriate spotter commands until giving the slap.

The instructor operating the simulator can select a static line ram-air or a manually opened chute. The static line chute gives an instructor more control over the opening altitude than the manually opened chute. (The instructor must deploy the manually opened chute by hitting the F5 button.) The simulator treats manually opened chutes as if the jumper was in freefall thus leading to lower opening altitudes than occurs with the BLM's drogue system.

## **Lesson III SIMULATOR PATTERNS**

### **LESSON OBJECTIVES:**

- **Demonstrate a proper crosswind, downwind, and base leg.**
- **Demonstrate ability to select an appropriate set-up point at an appropriate altitude.**

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### **Instructor Notes**

Select a scenario with a moderate amount of wind drift, 200-400 yards.

Utilizing the “Streamer Visualization” function prior to executing a jump can help a student form a jump plan and identify an appropriate set-up point. Having the student identify the appropriate set-up point prior to the jump can help the instructor evaluate the student’s thought process and prevent wasted jumps.

## **Lesson IV SIMULATOR FINAL APPROACH and LANDINGS**

### **LESSON OBJECTIVES:**

- **Demonstrate ability to fly parachute from the set-up point to the landing area utilizing the sight picture technique.**
- **Demonstrate ability to steer the parachute with smooth toggle movements.**
- **Demonstrate a soft well timed landing.**

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### **Instructor Notes**

Select a scenario with 200-400 yards of drift.

Select "Mis-spot short" an appropriate distance for the amount of drift to start at an appropriate set-up point. (Remember to select "Facing Away" from jumpspot.)

## **Lesson V    SIMULATOR COMPLETE JUMP**

### **LESSON OBJECTIVES:**

- **Perform a complete jump on the simulator utilizing proper procedures.**

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### **Instructor Notes**

Choose a fairly straight forward scenario. Jump should be a confidence booster before first actual jump.